

THE CAUSES OF WELFARE STATE EXPANSION

Deindustrialization or Globalization?

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INTRODUCTION

IT is commonplace to argue that the increasing openness of national economies has meant growing economic insecurity. This insecurity once supposedly fueled demands for larger welfare spending as a form of insurance.¹ The rising tide of globalization, however, is now widely seen as a hinderance to a government's ability to meet these demands and even as a cause of government cutbacks.² An alternative view combines this "second image reversed" with a concern for the political power of labor and the left.³ This revisionist perspective suggests that the challenges promoted by globalization when met by strong left-labor power within the domestic political system combine to produce a compensation strategy that entails a large and vibrant welfare state. This paper challenges both these views. Our argument, in short, is that most of the risks being generated in modern industrialized societies are the product of technologically induced structural transformations inside national labor markets. Increasing productivity, changing consumption patterns, and saturated demand for products from the traditional sectors of the economy are the main forces of change. It is these structural sources of risk that fuel demands for state compensation and risk sharing.

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¹ See David Cameron, "The Expansion of the Public Economy: A Comparative Analysis," *American Political Science Review* 72, no. 4 (1978); and Peter Katzenstein, *Small States in World Markets* (Ithaca, N.Y.: Cornell University Press, 1985).

² Dani Rodrik, "Why Do More Open Economies Have Larger Governments?" *Journal of Political Economy* 106 (October 1998).

³ See Geoffrey Garrett, "Capital Mobility, Trade and the Domestic Politics of Economic Policy," *International Organization* 49, no. 4 (1995); and idem, *Partisan Politics in the Global Economy* (Cambridge: Cambridge University Press, 1998).

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The transformation of labor markets in recent decades is revealed in a dramatic shift in the employment structure. The two traditional and, until recently, leading sectors of employment, that is, agriculture and industry, have everywhere contracted. In the early 1960s an average of 60 percent of total employment was in agriculture and manufacturing. In the next three decades this figure dropped by nearly half (see column A, Table 1). In the United States, for example, 5 percent of the working-age population lost employment in these sectors over the last three decades, whereas in countries such as France, Germany, Sweden, and Denmark, the comparable figure is 15 percent or more. In addition to cross-national variance, the speed of the process has also varied a great deal over time. Sometimes layoffs have occurred in a slow, steady trickle; at other times they have been quick and massive, resulting in headline-grabbing factory closings.

Individuals face significant risks as a result of these shifts. Those thrown out of a job or threatened by the loss of employment may find that the skills they have acquired are not easily transferable to other parts of the economy where employment may be expanding, namely, the service sector. Even where employment is available, a job outside one of the traditional sectors often entails a significant loss in income as well as the deprivation, at least in part, of pension rights, medical insurance, and other work-related benefits. For many, indeed, loss of employment in the traditional sectors entails complete removal from the active labor force.⁴ As one scholar notes, a significant part of this change in the occupational structure is due to the entry of young people into service employment and the early retirement of older workers from the traditional sectors.⁵ This change is confirmed by the dramatic reduction in employment activity on the part of older workers who have in one way or another been pushed into early retirement during the last few decades.⁶

Broadly speaking, governments have responded to the transformation of the employment structure in three distinct ways. First, some

⁴ There has been, however, significant cross-country variation in exposure to these risks. Those countries that were relatively early "deruralizers" were confronted with less problematic conditions, which helped them cope with structural change. Among these conditions were small entering-age cohorts, relatively low female participation in labor markets, and relatively buoyant labor markets. All of these conditions eased the problems of structural change. For a discussion of the timing of "deruralization" and its consequences, see Gøsta Esping-Andersen, *Social Foundations of Postindustrial Economies* (Oxford: Oxford University Press, 1999), 24–27.

⁵ Hans-Peter Blossfeld, "Is the German Dual System a Model for a Modern Vocational Training System?" *International Journal of Comparative Sociology* 33, nos. 3–4 (1993).

⁶ Martin Kohli, Martin Rein, Anne-Marie Guillemard, and Herman van Gunsteren, eds., *Time for Retirement: Comparative Studies of Early Exit from the Labor Force* (Cambridge: Cambridge University Press, 1992).

TABLE 1
 CHANGES IN THE EMPLOYMENT STRUCTURE
 (CHANGES FROM 1962 THROUGH 1993 IN THE SHARES OF
 WORKING-AGE POPULATION).

	<i>A</i> <i>Loss in</i> <i>Manuf.</i> <i>& Agric.</i>	<i>B</i> <i>Gain in</i> <i>Priv.</i> <i>Services</i>	<i>C</i> <i>A Not</i> <i>Absorbed</i> <i>by B</i>	<i>D</i> <i>Change in</i> <i>Gov.t</i> <i>Civ. Serv.</i>	<i>E</i> <i>Change</i> <i>in</i> <i>Military</i>	<i>F</i> <i>Not</i> <i>Absorbed</i>
Australia	13.4	11.6	1.9	3.8	-0.2	-1.8
Austria	16.9	5.5	11.3	6.2	0.1	5.0
Belgium	15.2	7.7	7.5	4.2	-0.7	4.0
Canada	8.1	11.4	-3.3	6.2	-0.7	-8.8
Denmark	21.0	5.2	15.7	14.9	-0.7	1.6
Finland	27.6	4.8	22.7	8.5	-0.6	14.9
France	20.9	10.4	10.6	3.9	-1.3	8.0
Germany	15.4	7.0	8.4	4.2	-0.2	4.4
Italy	19.5	8.7	10.8	4.0	-0.6	7.4
Japan	13.6	16.0	-2.5	0.4	-0.1	-2.8
Netherlands	13.3	16.8	-3.5	1.3	-1.2	-3.5
Norway	15.8	9.3	6.5	13.9	-0.4	-7.0
Sweden	17.7	2.9	14.8	14.4	-0.4	0.8
Switzerland	17.1	20.7	-3.7	4.2	-0.1	-7.7
United Kingdom	15.6	10.4	5.4	1.1	-0.5	4.9
United States	5.3	13.3	-8.0	3.5	-1.5	-10.0
With Australia:						
Average	16.0	10.1	5.9	5.9	-0.6	0.6
St. Dev.	5.0	4.7	8.2	4.5	0.4	6.7
Without Australia:						
Average	16.2	10.0	6.2	6.1	-0.6	0.7
St. Dev.	5.1	4.8	8.5	4.6	0.4	7.0

have promoted employment in private services, often by deregulating product and labor markets and allowing greater wage dispersion. At the same time, the governments have used various forms of public insurance to compensate workers for the risks of having to find new jobs in services. The United States is the archetypal example of this strategy, but Canada, the U.K., and more recently the Netherlands share some of the same features. In the U.S., since the expansion of private sector service employment has exceeded the relative modest loss in the traditional sectors, employment rates have actually increased (as indicated by the minus signs in columns C and F of Table 1).

The second strategy is for the state to maintain extensive regulation of private services as well as a relatively compressed wage structure

while simultaneously expanding employment in public services. Countries that have engaged heavily in this sort of strategy, most notably in Scandinavia, also have generally managed to elevate the total labor-force participation rate. On the spending side, government consumption has risen substantially, often complemented by an expansion of the state's public insurance functions in order to compensate for the risks associated with often very large employment losses in the traditional sectors (see the numbers for Denmark, Norway, and Sweden).

Finally, there are those economies where heavy regulation of labor and product markets has hampered a major expansion of private sector service employment. At the same time the public sector has not been allowed to grow to any significant extent. In combination with the large losses in the traditional sectors, this has led to a tremendous reduction in employment possibilities for those formerly active. Examples of states that have taken this route include Germany and France, and much of the welfare effort in these countries has been geared toward ensuring a relatively orderly and secure exit from the labor market, mainly through early retirement. Limiting labor-force participation in this manner is expensive, and, depending on the severity of shifts in the occupational structure, state-sponsored labor-market exit is often supplemented by an increase in the state's insurance role (as in the other countries). This response therefore creates transfer- as opposed to consumption-heavy welfare states.

The three responses clearly resonate with Esping-Andersen's typology of welfare states (liberal, social democratic, and Christian democratic),⁷ and we believe that labor-market institutions and partisan politics have played an important role in shaping these responses.⁸ By focusing on these major shifts in the labor-market structure and the partisan responses to them, we thus point to a causal structure that can help make sense of one of the most influential contemporary typologies of welfare states. The main focus of this paper, however, is to convince the reader that growth in both transfers and government consumption—the two main components of welfare-state spending—can largely be explained as a function of the severity of internally driven employment losses in the traditional sectors, *not* by forces in the global economy. Precisely because the underlying causal logic defines the available courses of political action, and hence helps us to account for

⁷ Gøsta Esping-Andersen, *The Three Worlds of Welfare Capitalism* (Princeton: Princeton University Press, 1990).

⁸ See also Torben Iversen and Anne Wren, "Equality, Employment, and Budgetary Restraint: The Trilemma of the Service Economy," *World Politics* 50 (July 1998).

the observed variance in welfare-state forms, *getting the causal story right is important*. This is also important for the sake of understanding how the politics of the welfare state is likely to change in the future. Since the processes of globalization and deindustrialization have very different distributions in time and space, the pattern of welfare expansion (or contraction) should vary accordingly.

The remainder of this paper is organized into four sections. In the first we examine the arguments of two leading scholars, both of whom see the increasing integration of national markets into the international economy as the most powerful force affecting governments' commitments to welfare spending. We suggest that there is little empirical evidence to sustain such a position. We then introduce and outline the logic of our own argument, focusing on the consequences of the employment dislocations connected to these major shifts in the occupational labor market structure since the early 1960s. In the third section this argument is tested on data for fifteen OECD countries over a period of thirty-three years, followed by an analysis that defends our argument and findings against the charges that deindustrialization is a result of either government spending itself or globalization. We conclude with a discussion of why domestic, as opposed to international, forces have been ignored in recent research, and we point to several areas where future research could prove fruitful.

DISCOUNTING GLOBALIZATION

The argument that globalization leads to welfare state expansion rests on two causal mechanisms. First, trade and capital market integration is said to expose domestic economies to greater real economic volatility, which implies higher income and employment risks for workers. Second, greater labor-market risks are hypothesized to generate political demands for expansionary spending policies that will cushion and compensate people for such risks. Rodrik focuses on the effects of trade and explains the logic in the following manner:

More open economies have greater exposure to the risks emanating from turbulence in world markets. We can view larger government spending in such economies as performing an insulation function, insofar as the government sector is the "safe" sector (in terms of employment and purchases from the rest of the economy) relative to other activities, and especially compared to tradables.⁹

⁹ Rodrik (fn. 2), 13.

Garrett extends the trade openness argument to globalization more broadly, including growing capital market integration:

Perhaps the most important immediate effect of globalization is to increase social dislocations and economic insecurity, as the distribution of incomes and jobs across firms and industries becomes increasingly unstable. The result is that increasing numbers of people have to spend evermore time and money trying to make their future more secure.¹⁰

Left governments are more responsive to popular demands for compensation than right governments, according to Garrett, and his emphasis on capital market openness is also novel. The trade openness thesis, however, has a long history in political science, going back to the seminal works of Cameron, Ruggie, and Katzenstein.¹¹ To our knowledge the trade argument has not been subject to any serious challenges, and it stands out as one of the important explanations for the rise of the welfare state since the Second World War. The role of capital market integration is more contentious because of the effects such integration may have on macroeconomic autonomy,¹² but it is a logical extension of the trade openness argument.

We find it surprising that the alleged linkage between international economic exposure and labor-market risks has not received more critical attention. Although it is undeniable that international market volatility increases labor-market risks, whether openness is related to risk depends on the extent to which international market volatility is greater than domestic market volatility. It is not sufficient, for example, to show that international price volatility, measured in terms of trade instability, is related to spending.¹³ In addition, at least one of two conditions must obtain: (1) price volatility in international markets is greater than in domestic markets, and (2) trade concentrates more than diversifies risk.

There are no theoretical reasons to expect the first condition to hold, and trade theory does not make strong predictions about the second. Although trade concentrates risks to the extent that it leads to special-

¹⁰ Garrett (fn. 3, 1998), 7.

¹¹ Cameron (fn. 1); John G. Ruggie, "International Regimes, Transactions and Change: Embedded Liberalism in the Postwar Economic Order," in Stephen D. Krasner, ed., *International Regimes* (Ithaca, N.Y.: Cornell University Press, 1983); Katzenstein (fn. 1).

¹² See Fritz Scharpf, *Crisis and Choice in European Social Democracy* (Ithaca, N.Y.: Cornell University Press, 1991); and Paulette Kurzer, *Business and Banking* (Ithaca, N.Y.: Cornell University Press, 1993).

¹³ See Dani Rodrik, *Has Globalization Gone Too Far?* (Washington, D.C.: Institute for International Economics, 1997), chap. 3.

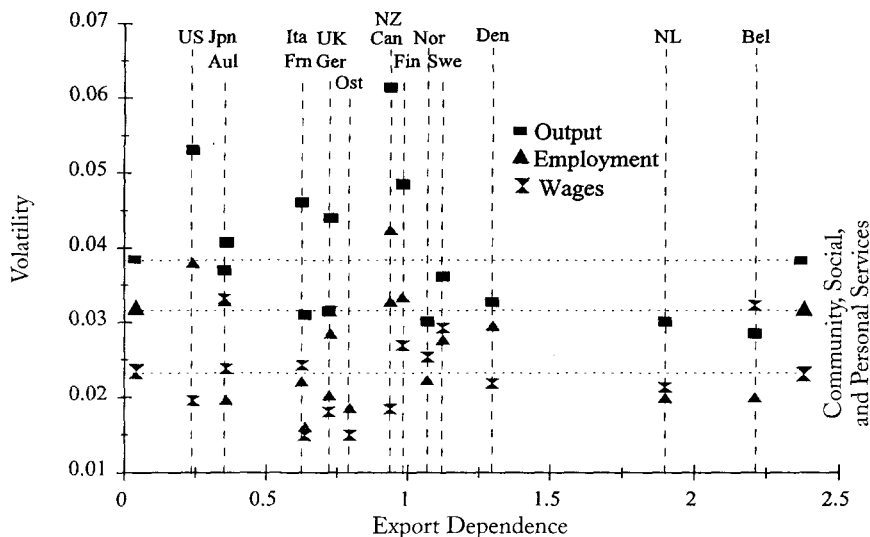


FIGURE 1
TRADE DEPENDENCE AND MANUFACTURING VOLATILITY^a

SOURCES: OECD, *The OECD STAN Database* (1994).

^a Export dependence is the total value of manufacturing exports divided by value added; volatility is the standard deviation in the rate of growth in manufacturing output, employment, and wages in the period 1970–93. Output data is not available for Austria; only employment data is available for New Zealand.

ization, it diversifies risks to the extent that it occurs across several national markets. Which effect dominates depends on the covariance of volatility across product and national markets. If specialization occurs within product categories that are exposed to similar cycles (complementarities) while trade occurs across national markets that are subject to different cycles, trade will actually lead to lower overall volatility. Since the bulk of trade within the OECD is intraindustry and occurs across numerous national markets, there is little a priori reason to expect that trade is associated with greater volatility. But only empirical evidence can resolve the issue.

For this purpose we have compared volatility in output, employment, and wages across the manufacturing sectors of sixteen OECD countries with very different exposures to trade (see Figure 1). Output and wages are measured in real terms, and volatility is defined as the standard deviation of annual growth rates between 1970 and 1993. This formula is

similar to the one used by Rodrik to measure volatility in terms of trade,¹⁴ but here we are able to explore directly whether volatility in real variables is related to trade. As a baseline for the comparison, Figure 1 shows the average volatility of a completely nontraded (but private) service sector: community, social, and personal services (indicated by the three dotted horizontal lines).¹⁵

Contrary to the logic of the trade openness argument, there is no relationship between the export dependence of manufacturing (measured as the value of exports divided by manufacturing value added) and any of the volatility measures. The only variable weakly related to export dependence is output volatility, but the association is in the opposite direction of the one implied by the trade openness argument. Nor is there any evidence that the traded manufacturing sector is more volatile than the average for the nontraded service sector. Finally, it is noteworthy that there is no association between the level of volatility and Katzenstein's distinction between small corporatist welfare states and large liberal (or statist) ones.

If we changed the x-axis in Figure 1 to measure capital market openness instead of trade openness, the pattern would be no clearer. It does not appear to be the case that greater openness to the international financial system increases the volatility of the domestic real economy. Moreover, even if that proved to be the case, greater exposure to speculative capital flows may well be associated with a countervailing reduction in the capacity of governments to respond to pressures for compensation.¹⁶

But if these findings are correct, how is it possible that previous work has found such a clear link between globalization (especially trade openness) and spending? To answer this question we would like to draw attention to some important methodological issues in that work. Katzenstein is interested primarily in the effects of the global economic crisis in small countries during the interwar years, and he never presents any systematic evidence for the more general thesis that openness breeds compensation.¹⁷ Focusing on small and open economies, it is

¹⁴ Rodrik (fn. 2).

¹⁵ The government sector is less volatile, but it does not make sense to include it in the comparison since this sector is supposed to be growing as a consequence of high volatility in the exposed sectors.

¹⁶ This constraint could come on both the spending and the revenue side. Thus, there is broad consensus that capital market integration has raised the price of running deficits, while others (including Rodrik) have argued that it has made taxation of capital more difficult. The latter argument, however, is disputed by Duane Swank, who finds no evidence that business taxation has become less important for revenue generation. See Swank, "Funding the Welfare State: Globalization and the Taxation of Business in Advanced Market Economies," *Comparative Political Studies* 46 (September 1998).

¹⁷ Katzenstein (fn. 1).

difficult to assess whether expansion in the government's role in the economy is due to trade openness or some other features that these countries have in common. Cameron offers some cross-sectional evidence¹⁸ but in the form of correlation coefficients or very simple regressions that fail to control for a number of factors (such as the size of the dependent population) that we now know are important. In fact, our data support Cameron's results in the sense that there is a cross-sectional association between openness and spending ($r = 0.6$), but this relationship does not hold once proper controls are included in the statistical model (as we will show). In the case of Rodrik,¹⁹ both cross-sectional and pooled time-series evidence is presented, but the analysis includes a large number of less developed and mostly nondemocratic countries to which our argument is not necessarily applicable.²⁰

The results that are most relevant for our purposes are presented by Garrett.²¹ Not only does Garrett focus on the same countries that we do, he also includes capital market integration in his analysis. Furthermore, Garrett's analysis picks up both cross-national and cross-time variance and allows for a large number of controls. It is therefore of considerable interest to replicate and further examine Garrett's results, as we have done in Table 2. The first two columns of the table replicate Garrett's results using change in government transfers and in civilian government consumption as the dependent variables.²² First, note that the results for trade openness are weak and statistically insignificant. Somewhat surprisingly, Garrett's own results do not appear to support the trade openness argument. However, the coefficient for the interaction between what Garrett calls left labor power and capital market openness is positive and statistically significant, supporting his thesis that open capital markets lead to higher spending when the political left is strong and unions are encompassing. (Left labor power is a composite index of these variables.)

¹⁸ Cameron (fn. 1).

¹⁹ Rodrik (fns. 2 and 13).

²⁰ Indeed, trade openness may be more salient for less-developed countries because trade in many of these countries, unlike trade between OECD countries, has led to heavy dependence on a few primary commodities that are subject to high international price volatility.

²¹ Garrett (fn. 3).

²² Our thanks to Geoffrey Garrett for generously providing us with the data he used in his analyses, thereby allowing us to replicate his findings. See Table 4.4 in Garrett (fn. 3, 1998), 90. Note that Garrett uses levels of spending on the left-hand side, but this formulation gives an estimate for R-squared that is uninformative since the lagged dependent variable will pick up most of the cross-national variance. Using changes in spending on the left-hand side avoids this problem while leaving the estimated coefficients the same. (In mathematical terms, we are simply subtracting the lagged dependent level variable on both sides of the equal sign, which obviously leaves the coefficients for all other variables unchanged.)

TABLE 2
 REPLICATING GARRETT'S REGRESSION RESULTS^a

	<i>Garrett's Results</i>		<i>Our Results</i>	
	<i>Transfers</i>	<i>Consumption</i>	<i>Transfers</i>	<i>Consumption</i>
Lagged dependent level	-0.141*** (-4.65)	-0.140*** (-5.49)	-0.094*** (-3.21)	-0.061*** (-3.55)
Trade openness	-0.008 (-0.74)	-0.016* (-1.73)	0.005 (0.50)	0.004 (0.44)
Capital openness	-0.192 (-1.27)	-0.380** (-2.45)	-0.045 (-0.31)	-0.012 (-0.12)
Left labor power (LLP)	0.067 (0.76)	0.134 (1.38)	0.116 (1.36)	0.196** (2.04)
LLP*Trade openness	0.001 (0.41)	0.001 (1.00)	-0.001 (-0.87)	-0.001 (-0.86)
LLP*Capital openness	0.066** (2.38)	0.075*** (2.68)	0.027 (1.05)	0.013 (0.71)
Growth	-0.168*** (-10.50)	-0.137*** (-11.53)	—	—
Old population	0.135** (2.43)	0.006 (0.10)	—	—
Unemployed	0.683*** (3.67)	0.008 (0.42)	—	—
Unexpected growth	—	—	-0.077*** (-5.75)	-0.097*** (-12.14)
Automatic transfers	—	—	0.558*** (6.93)	—
Automatic consumption	—	—	—	0.970*** (14.94)
Adjusted R-squared	0.4235	0.4835	0.4235	0.6735
Number of observations	350	350	350	350

^a T-statistics are in parentheses. The results for period and country dummies are not shown.

* Significance level: < 0.10

** Significance level: < 0.05

*** Significance level: < 0.01

The results, however, turn out to be highly sensitive to the precise specification of the control variables. One of these controls is GDP growth, which Garrett explains with reference to an article by Roubini and Sachs.²³ In that article the authors argue that governments make

²³ Garrett (fn. 3, 1998), 80; Nouriel Roubini and Jeffrey D. Sachs, "Political and Economic Determinants of Budget Deficits in the Industrial Democracies," *European Economic Review* 33, no. 5 (1998).

spending decisions based on economic forecasts which rely on actual growth in the recent past. If growth turns out to be unexpectedly high, spending as a proportion of GDP will be smaller than anticipated, while spending will be higher if GDP growth is unexpectedly low.²⁴ They therefore define an “unexpected growth” variable, which is the difference between actual growth in a given year and average growth in the previous three years. This variable is obviously correlated with GDP growth, but it is not identical, and we have consequently substituted Roubini and Sachs’s variable for Garrett’s simple GDP growth variable in columns 3 and 4.

In addition, we made some refinements to the variables intended to remove nondiscretionary components of spending. In the case of transfers the relevant controls are the rate of unemployment and the size of the old-age population. These variables can be improved by taking into account the replacement rates for nonemployment that vary across time and countries. Therefore, to measure nondiscretionary transfers more accurately, we multiply the change in the size of the dependent population (that is, the proportion of unemployed and old people) by the replacement rates at any given point in time. In turn, average replacement rates can be approximated as the share of transfers in GDP relative to the share of the dependent population in the total population.²⁵ This composite variable is used in column 3 in place of the unemployment rate and the old-population rate.

In the case of government consumption, the number of unemployed and old people is irrelevant (as Garrett’s results clearly show), but Garrett does not take into account a different nondiscretionary effect. Because costs in public services (especially wage costs) tend to increase at the same rate as in the rest of the economy, while productivity does not, a constant level of provision will cause prices of government services to rise faster than in the economy as a whole. This nondiscretionary component of government consumption can be removed by another measure, called automatic consumption, which is the share of government consumption in GDP multiplied by the rate of growth in the price deflator for government services divided by the rate of growth in the price deflator for the entire GDP.²⁶

From the rise in explained variance (see Table 2), the importance of relative price changes for government consumption becomes clear.

²⁴ See Thomas Cusack, “Partisan Politics and Public Finance: Changes in Public Spending in the Industrialized Democracies, 1955–1989,” *Public Choice* 91 (June 1997); and idem, “Partisan Politics and Fiscal Policy,” *Comparative Political Studies* 32 (January 1999).

²⁵ Ibid.

²⁶ Cusack (fn. 24, 1997).

More importantly, the effects of capital market openness completely disappear once these refined controls are included. This is the case whether consumption or transfers are examined. With respect to trade openness, one can see that the parameter on this variable is insignificant as before, but the sign on the interaction term is now actually in the wrong direction. In short, Garrett's data does not support the existence of a relationship between globalization and welfare state spending once more refined control variables are used. The only result that holds up is that left-labor power has a significant expansionary effect on government consumption—a finding that is echoed in the more extensive analysis presented below and by numerous other studies.²⁷

We would like to underscore that these results do not undermine Garrett's main conclusion that globalization is compatible with a large welfare state. In fact, we agree with most of Garrett's critique of the globalization literature's predictions of broad-based retrenchment. But we also do not believe that globalization has been much of a factor in the postwar expansion of the welfare state. This leaves a conspicuous gap in the general understanding of the growth of the welfare state over the past four decades. Traditional explanations that emphasize the role of the industrial working class run up against the inescapable fact that spending has skyrocketed in many countries precisely during a time when the industrial working class has been in steep decline. This does not mean that partisanship is unimportant for the form that this expansion has taken, as we explain below, but it does mean that, to understand the driving force behind the expansion, it is necessary to look beyond standard class-power explanations.

DEINDUSTRIALIZATION AND THE LABOR-MARKET RISK STRUCTURE

Like Garrett and Rodrik we believe that exposure to risk in the labor market is a powerful determinant of peoples' preferences for state protection and public risk sharing, and we argue that the main sources of risk are to be found in the interaction of sector-specific skills and domestic economic processes. In particular, we suggest that the labor-market dislocations associated with major shifts in the sectoral-occupational structure have been a driving force behind the expansion

²⁷ For recent examples see Cusack (fn. 24); Alexander Hicks and Duane Swank, "Politics, Institutions, and Welfare Spending in Industrialized Democracies, 1960–82," *American Political Science Review* 86 (September 1992); and Evelyn Huber, Charles Ragin, and John Stephens, "Social Democracy, Christian Democracy, Constitutional Structure and the Welfare State," *American Journal of Sociology* 99, no 3 (1993).

of the welfare state since the early 1960s. To get a sense of the numbers, in 1962 about 60 percent of the labor force in the OECD area was employed in agriculture or industry; thirty-three years later this figure had dropped to about 30 percent. As we document below, this massive sectoral shift is the outgrowth of deep forces of technological change that have coincided with progressive market saturation and shifting patterns of demand—structural-technological conditions that also characterized the industrial revolution. Given the work of Esping-Andersen,²⁸ Korpi,²⁹ Stephens,³⁰ and others about the relationship between the rise of industry and the early development of the welfare state, one would expect such a massive transformation of the occupational structure to be of great importance in the demand for and supply of welfare state programs.

The importance of changes in the occupational structure depends on the transferability of skills and social benefits. Transferable skills protect against market vagaries by making individuals less dependent on a single employer or on employers in a particular branch of the economy. Labor-market risks are therefore generated across the interfaces between economic sectors requiring very different types of skills. This logic is reinforced when we consider that privately provided social benefits such as health insurance and pensions also tend to be constrained by the transferability of skills. Thus, when skills are firm-specific, employers have an incentive to provide nontransferable company benefits, both as a tool of control over its workforce and as an incentive for their employees to acquire additional firm-specific skills.³¹ Correspondingly, if skills are industrywide, employers in that industry have a rationale for providing benefits that are transferable across firms, but only within the industry. Although the latter depends on the ability of employers to collude in the provision of both skills and benefits, the point is that the transferability of benefits will not exceed the transferability of skills in the absence of state intervention.

The approximate correspondence between the scope of employer-sponsored insurance and the transferability of skills tells us a great deal about the sources of demand for welfare state expansion. Once a worker

²⁸ Gösta Esping-Andersen, *Markets against Politics: The Social Democratic Road to Power* (Princeton: Princeton University Press, 1985); idem (fn. 7).

²⁹ Walter Korpi, *The Working Class in Welfare Capitalism: Work, Unions and Politics in Sweden* (London: Routledge and Kegan Paul, 1978); idem, *The Democratic Class Struggle* (London: Routledge and Kegan Paul, 1983).

³⁰ John D. Stephens, *The Transition from Capitalism to Socialism* (London: Macmillan, 1979).

³¹ See the pathbreaking study by Isabela Mares on the role of employees in social policy formation. Mares, "Negotiated Risks: Employers' Role in Social Policy Development" (Ph.D. diss., Harvard University, 1998).

is permanently dismissed from a firm or occupation within a sector, and therefore has to either transgress a skill boundary or remain nonemployed, both skills and benefits will be forfeited or downgraded. In some cases, then, workers are left outside employment with no or few means of support; in other cases, workers find new jobs at substantially reduced wages and benefits levels. Thus, workers can protect themselves against the risks of major shifts in the economic and occupational structure only through the mediation of the state. Such protection comes in the form of state-guaranteed health and old-age insurance (which makes it possible to move across sectoral interfaces without losing benefits) as well as through early retirement and certain forms of disability insurance, which facilitate a relatively painless exit from the labor market (and therefore makes it possible not to have to move across the skill interfaces). When skills and benefits do not travel well, while large numbers of people face the risks of having to make such “travels,” we would therefore expect demand for state-sponsored compensation and risk sharing to be high.

Such demands are not necessarily opposed by employers, as commonly assumed in the welfare state literature, and our logic highlights one of the most important reasons why. Without assurances from the state, workers will be less likely to make risky investments in nontransferable skills—skills that are very valuable to employers. Especially with the transition to more knowledge-intensive forms of production, firms that rely on firm- and industry-specific skills share with their employees an interest in strengthening the aspects of the welfare state that reduce the riskiness for workers of making investments in specific skills. Though clearly at odds with the standard perception that business always opposes social spending, the argument is consistent with an emerging new body of scholarship that documents the supportive and often proactive role of some groups of employers in developing and shaping the modern welfare state.³²

Like the distinction between agriculture and industry in the latter half of the previous century, the distinction between manufacturing and services represents one of the most important economic interfaces affecting the transferability of skills in the latter half of the twentieth century. Whereas skills within agriculture, manufacturing, or services are typically transferable to some degree, most skills acquired in either manufacturing or in agriculture travel very poorly to services occupa-

³² See, for example, *ibid*; Cathie Jo Martin, “Nature or Nurture? Sources of Firm Preference for National Health Reform,” *American Political Science Review* 89 (December 1995); and Peter Swenson, “Arranged Alliance: Business Interests in the New Deal,” *Politics and Society* 25, no. 1 (1997).

tions. Even low-skilled blue-color workers find it exceedingly hard to adjust to similarly low-skilled service sector jobs because they lack something that is vaguely referred to as social skills. In addition, as noted above, the shift in the distribution of employment between these sectors has been quite dramatic since the beginning of the 1960s. If our theoretical argument is correct, therefore, we should find at least some evidence that deindustrialization has expanded the welfare state since the early 1960s. This does not imply that no skills are transferable from industry to services or that other skill interfaces in the economy are irrelevant. Our only claim is that deindustrialization picks up one salient empirical manifestation of our theoretical logic. We are of course quite happy to concede that the use of deindustrialization as a proxy for the underlying theoretical variable—the risk of moving across skill boundaries—only establishes a lower bound for the explanatory power of our general argument.

Considering this obvious link between labor force transformations and welfare state spending, it is remarkable how little attention deindustrialization has been accorded in the study of welfare state dynamics. Not a single large-N cross-national study of the welfare state has to our knowledge focused on deindustrialization as a driving force or even included it as a control variable. Wilensky,³³ Flora and Alber,³⁴ and others have pointed to the importance of economic transformations, industrialization in particular, to explain the rise of the welfare state. However, the emphases in their explanations—problems associated with industrialization such as dangerous working conditions and income security for those denied access to employment³⁵ as well as demographic structural changes induced by the growth in overall economic well-being³⁶—are very different from ours and not clearly applicable to the phenomenon of deindustrialization that we are interested in.³⁷

Perhaps this omission in the literature is due to a misconception that deindustrialization is fairly uniform across countries and time and

³³ Harold L. Wilensky, *The Welfare State and Equality* (Berkeley: University of California Press, 1975).

³⁴ Peter Flora and Jens Alber, "Modernization, Democratization, and the Development of Welfare States in Europe," in Flora and Arnold Heidenheimer, eds., *The Development of Welfare States in Europe and America* (London: Transaction Books, 1981).

³⁵ *Ibid.*, 41.

³⁶ See Wilensky (fn. 33), 47.

³⁷ There are passages in Harold L. Wilensky and Charles N. Lebaux's *Industrial Society and Social Welfare* that concern the problem of relocating and retraining workers made redundant in the process of industrialization in the U.S. This logic is clearly in line with our argument. We thank an anonymous reader for pointing this out. Wilensky and Lebaux, *Industrial Society and Social Welfare: The Impact of Industrialization on the Supply and Organization of Social Welfare Services in the United States* (New York: Russell Sage Foundation, 1958).

therefore cannot explain cross-national and temporal variance in the speed of welfare state expansion. In fact, however, deindustrialization varies greatly in both time and space. For example, in an early industrializing country like the United States, industrial employment as a percentage of the adult population never reached the same levels as in a late industrializer like Sweden—22 versus 31 percent at their peaks. The decline was correspondingly much slower and modest in the U.S., falling by 3 percent between 1962 and 1993 compared to 13 percent in Sweden. In general, the amplitude of the swings in the sectoral employment structure is much greater in late than in early industrializers, which accounts for most of the variance in the speed of deindustrialization. As we show below, the best predictor of deindustrialization is simply previous levels of industrialization.

Both the magnitudes of the sectoral shifts in employment and the cross-national differences are magnified by the decline of agriculture. Although we usually associate agricultural decline with the rise of industry, the two processes started to move in phase in the early to mid-1960s, particularly in countries that industrialized late. Agricultural decline is due to the same forces of structural-technological change, which is explored below. Hence, when we talk about deindustrialization in the following, we have in mind this secular, long-term, and structurally driven process of labor shedding in *both* agriculture and industry beginning in the early 1960s.

While we maintain that deindustrialization is a crucial (and neglected) source of welfare state expansion, we are not implying that political and institutional factors are unimportant. As Garrett emphasizes in his work, the welfare state is a mechanism for redistribution as well as risk sharing. We would therefore expect partisan governments and organized interests to shape social policies in order to benefit the distributive interests of their own constituencies. As argued well by Garrett, where unions are strong and centrally organized and where left governments have been dominant, the welfare state can be expected to assume a more redistributive form.³⁸ Likewise, redistribution is affected by the location of the median voter insofar as political parties adopt policies that will appeal to the median voter.³⁹ The lower the income of

³⁸ Garrett (fn. 3).

³⁹ The attraction of the median voter depends on the electoral system. In two-party systems the mechanism is vote maximization, which leads to centrist appeals. See Anthony Downs, *An Economic Theory of Democracy* (New York: Harper and Row, 1957), chaps. 7–8; and Gary W. Cox, “Centripetal and Centrifugal Incentives in Electoral Systems,” *American Journal of Political Science* 34, no. 4 (1990). In multiparty systems the mechanism is office maximization through which governing coalitions come to recognize the importance of appealing to the median voter. See Michael Laver and Norman

the median voter and the more exposed to risk, the greater the pressure for redistributive policies.⁴⁰ Since low-income workers in tenuous labor-market positions are less likely to vote than better educated and higher-income people,⁴¹ an indirect measure of the median voter location is the level of participation in national elections.

The explanatory salience of these political variables depends on the extent to which we look at spending categories that have a redistributive effect. Aggregate levels of transfers are not necessarily higher under left than under right governments insofar as such transfers can be used to address labor-market risks without affecting income or status differentials.⁴² By contrast, government service provision is inherently redistributive because it offers people equal access to services, such as education, health care, and housing, which are paid for through taxation. In addition, egalitarianism and public sector expansion are causally related because earnings compression undermines the growth of low-productivity and price-sensitive private service sector jobs, thereby putting pressure on the government to provide “compensating” jobs in the public sector.⁴³ So while deindustrialization everywhere propels the growth of welfare state spending, whether in the form of government transfers or consumption, we expect the distributive aspects of the rising service economy and the private-public sector mix of employment to vary according to political parameters.

FINDINGS

We use an error correction model of the type introduced in Table 2, with changes in government transfers and civilian government consumption as the dependent variables. The model has the following form:

$$\Delta Y_{i,t} = \alpha + \beta_1 \cdot Y_{i,t-1} + \sum \beta^j \cdot X_{i,t-1}^j + \sum \beta_\Delta^j \cdot \Delta X_{i,t}^j + \epsilon_t$$

where Y is a spending variable and X is an independent variable. The subscripts i and t refer to the particular country and time period re-

Schofield, *Multiparty Government: The Politics of Coalition in Europe* (Oxford: Oxford University Press, 1991).

⁴⁰ Alan Meltzer, and Scott Richard, “A Rational Theory of the Size of the Government,” *Journal of Political Economy* 8, no. 9 (1981). See also Hicks and Swank (fn. 27).

⁴¹ Arend Lijphart, “Unequal Participation: Democracy’s Unresolved Dilemma—Presidential Address,” *American Political Science Review* 91, no. 1 (1997).

⁴² Esping-Andersen (fn. 7).

⁴³ See Gösta Esping-Andersen, *Changing Classes: Stratification and Mobility in Postindustrial Societies* (London: Sage, 1993); idem, *Social Foundations of Postindustrial Societies* (Oxford: Oxford University Press, 1999); Iversen and Wren (fn. 8); and Andrew Glyn, “Low Pay and the Volume of Work” (Manuscript, Corpus Christi College, Oxford University, 1997).

spectively, while the superscript j refers to the particular independent variable. Δ is the first difference operator.

This model has a number of useful properties, and it is consistent with recommendations on specifications that are capable of capturing both long- and short-term dynamics in a pooled time-series-cross-section context.⁴⁴ First, the parameter for the lagged dependent level variable (β_1) provides an easy check on equilibrium properties. β_1 should be between -1 and 0 to ensure that the incremental effects of a shock to any exogenous variable are progressively reduced over time, causing spending to converge to a long-term equilibrium. For readers more familiar with models that use the *level* of spending on the left-hand side, the current model can be reformulated into such a model by simply adding $Y_{i,t-1}$ on both sides of the equal sign. This yields $Y_{t,i} = \alpha + (1 + \beta_1) \cdot Y_{i,t-1} + \dots$, where $(1 + \beta_1)$ is the new parameter for the lagged dependent level variable. There is a small advantage to using the error correction formulation, however, because the model yields estimates of R^2 that are more informative of the variance explained by the independent variables of interest.⁴⁵ Otherwise the choice to use either levels or first differences does not affect the results.

The other useful feature of the present model is that it enables us to separate out permanent and transitory effects of any independent variable. Although not intuitively obvious, it can be shown that the parameter for a lagged independent *level* variable, X_{t-1} , is a measure of the permanent (or lasting) effect of a one-off change in that variable, while the parameter for a *change* variable, ΔX_t , is a measure of the transitory (or passing) effect of a one-off change in that variable.⁴⁶ The long-term permanent effect of an independent variable can be calculated by dividing the parameter for the lagged level of that variable by minus the parameter for the lagged dependent level variable: $\beta^j / -\beta_1$ (assuming that β_1 is between 0 and -1). If a variable exhibits *only* transitory effects, that is, if only the parameter for its first difference is different from zero, spending will eventually revert back to its original level unless the independent variable changes continuously (assuming again that β_1 is between 0 and -1). Since all the theoretical variables are defined as

⁴⁴ See Nathaniel Beck and Jonathan N. Katz, "Nuisance vs. Substance: Specifying and Estimating Time-Series-Cross-Section Models," in John R. Freeman, ed., *Political Analysis*, vol. 6 (Ann Arbor: University of Michigan 1996), 11.

⁴⁵ The reason is that in the model using levels of spending on the left-hand side, much of the variance will be accounted for by the lagged dependent variable, showing simply that current spending depends on past spending.

⁴⁶ See Nathaniel Beck, "Comparing Dynamic Specifications: The Case of Presidential Approval," in James Stimson, ed., *Political Analysis*, vol. 2 (Ann Arbor: University of Michigan Press, 1992).

proportions (either of GDP or of the working-age population), they cannot grow (or fall) without limit and will therefore have no lasting effects on spending unless the parameters for their lagged levels are nonzero.⁴⁷ Hence, the parameters for the change variables are of interest only if we care about the specific time dynamics of an independent variable. To keep the results simple, we have therefore only included first differences for those independent variables that are of particular theoretical interest.

We use fairly much the same set of explanatory variables for both transfer spending and civilian government consumption outlays. The exact variable definitions and data sources are summarized in the Appendix. The only difference between the two specifications is the “autonomous” spending term in each equation. In the equation for transfers, this item is based on the prevailing replacement rates of the program (at time $t-1$) times the first difference in the size of the clientele for such programs. In the equation for government consumption, the autonomous spending term is a function of the prevailing level of spending (at time $t-1$) times the rate of change in the relative prices confronting government. As discussed above, in both instances the argument is that there are nondiscretionary elements to spending that need to be eliminated in any well-specified model.⁴⁸

In addition to the lagged level of the spending component, there are four sets of variables in each specification. First, there is a set of variables meant to detect whether international or domestic economic sources are driving spending. On the international side, we have included measures of trade openness as well as capital mobility. On the domestic side, we have introduced measures for deindustrialization and for a variety of political variables such as the level of electoral turnout, the left-right partisan composition of the government, and a measure of the relative strength of labor within the industrial relations system. The remaining control variables have already been introduced in the discussion of Garrett’s results.

Deindustrialization is defined as 100 minus the sum of manufacturing and agricultural employment as a percentage of the working-age

⁴⁷ This does not *have* to be the case. One of the control variables, unexpected GDP growth, can in principal rise indefinitely.

⁴⁸ The basic results we report below for the deindustrialization and globalization variables are robust to a large number of alternative model specifications. Thus, we have tried to group the data into time intervals using different periodizations; we have run the regression with and without the political variables, with and without the change terms; and we have tried to exclude one country at a time. In all cases the results for deindustrialization are strong and statistically significant, whereas for the globalization variables, they are weak and statistically insignificant, with the exceptions noted in the text.

population. The base of 100 is somewhat arbitrary. For example, the peak of employment in agriculture and manufacturing, a number that varies across countries, could have been used as the base instead. However, the statistical analysis is insensitive to the choice of base due to the inclusion of a full set of country dummies.⁴⁹ If each country has a unique base, it simply alters the nationally specific intercepts that can take on any value. Also, it should be emphasized that because deindustrialization is defined as a proportion of the working-age population it is not the case that public employment, which is closely related to government consumption, will alter the denominator. The only way that government consumption, or any other form of government spending, can affect the deindustrialization measure is if spending is causally related to the number of people employed in agriculture or industry—a possibility we will consider in the next section.

The equations have been estimated using a pooled data set with fifteen countries and a temporal domain ranging from 1961 up to and including 1993, a period of thirty-three years. Tests for heteroskedasticity in both pooled regressions suggested the need to correct for this problem and so we employed Beck and Katz's method for deriving panel corrected standard errors.⁵⁰ The results for two simple additive models, one for each category of spending, are presented in Table 3. Separate runs using robust regression techniques (not shown) yield almost identical results, so our findings are not driven by outliers.⁵¹

First, note that none of the globalization variables registers a statistically significant permanent impact on government transfers, only a small transitory effect of trade openness. For consumption, trade and capital market openness both exhibit small significant effects, but for capital mobility the effect is entirely transitory, while for trade it goes in the opposite direction of that predicted by the openness argument. It is conceivable that the negative effect for trade reflects its differential welfare effects. Thus, while growing exposure to competition from low-wage countries raises the uncertainty for those already at high risk,⁵²

⁴⁹ An F-test indicates that the country dummies belong in the model.

⁵⁰ Nathaniel Beck and Jonathan N. Katz, "What to Do (and Not to Do) with Time-Series-Cross-Section Data," *American Political Science Review* 89, no. 3 (1995).

⁵¹ Specifically, we used Roy E. Welch's "bounded-influence technique," which weights individual cases if they exceed a size-adjusted cut-off point. Welch, "Regression Sensitivity Analysis and Bounded-Influence Estimation," in Jan Kmenta and James B. Ramsey, eds., *Evaluation of Econometric Models* (New York: Academic Press, 1980), 164–66. See also J. Fox, *Regression Diagnostics* (London: Sage Publications 1991), 31.

⁵² Andrian Wood, *North-South Trade, Employment and Inequality: Changing Fortunes in a Skill-Driven World* (Oxford: Oxford University Press, 1994); Edward E. Leamer, *Sources of International*

TABLE 3
REGRESSION RESULTS FOR GOVERNMENT SPENDING^a

		<i>Transfers</i>	<i>Consumption</i>
<i>Globalization variables</i>	Lagged spending level (Y_{t-1})	-0.067*** (-3.17)	-0.051*** (-3.78)
	Trade openness	-0.005 (-1.21)	-0.004* (-1.72)
	Δ Trade openness	0.018 (2.09)**	-0.005 (-0.99)
	Capital openness	0.010 (0.35)	-0.007 (-0.39)
	Δ Capital openness	0.016 (0.29)	-0.069** (-2.07)
<i>Deindustrialization variables</i>	Deindustrialization	0.044*** (3.10)	0.031*** (3.18)
	Δ Deindustrialization	0.142*** (3.69)	0.090*** (4.08)
<i>Political variables</i>	Left government CoG	-0.062 (-1.24)	0.090*** (2.67)
	Δ Left government CoG	0.041 (0.62)	0.049 (1.19)
	Electoral participation	-0.005 (-0.69)	0.012*** (2.67)
	Strength of labor	0.078 (0.09)	0.898*** (2.88)
<i>Controls</i>	Unexpected growth	-0.077*** (6.43)	-0.092*** (14.59)
	Automatic transfers	0.845*** (9.53)	
	Automatic consumption		0.971*** (15.87)
	Adjusted R-squared	0.47	0.63
	Number of observations	495	495

^a T-scores are in parentheses. The results for country dummies are not shown.

* Significance level: <0.10

** Significance level: <0.05

*** Significance level: <0.01

trade may well improve welfare for all others.⁵³ Whatever the explanation, the magnitude of the effect is small. Thus, for each percentage point that the foreign sector grows, the long-term equilibrium level of civilian government consumption declines by only 0.07 percent.

Compare these results with those for deindustrialization. For each percent decline in employment in the traditional sectors, the long-term target equilibrium for social transfer spending increases by approximately 0.4 percent. The corresponding effect for government consumption is 0.6 percent, while the short-term impact is the elevation of the actual spending level by 1 percent for every percent decrease in employment in the traditional sectors. In other words, a standard deviation change in deindustrialization is associated with roughly one-half of a standard deviation change in spending, which implies that about half of the variance in spending is explained by the deindustrialization variable. All effects of deindustrialization are statistically significant at a 0.01 level or better. From these results it seems justified to conclude that the effects of the domestic economic variables carry far greater weight than globalization in shaping government spending.⁵⁴

Another feature of the findings deserves emphasis: the effect of deindustrialization persists over time. Apparently spending gets locked in by organizational and institutional factors that are exogenous to our model. As argued by Pierson, spending itself creates political clienteles that will press for further spending and resist attempts at retrenchment.⁵⁵ Hence, even though the process of deindustrialization is the causal agent in the expansion of the welfare state, the disappearance of this causal agent will not necessarily lead to retrenchment but will “merely” retard further expansion. However, the character of the political game over welfare policies is likely to change when compromises

Comparative Advantage: Theory and Evidence (Cambridge: MIT Press, 1984); idem, “Trade Economists View of U.S. Wages and ‘Globalization’” (Paper presented at the Political Economy of European Integration Study Group Meeting, University of California, Berkeley, January 1996).

⁵³ Rodrik (fn. 2), chap. 4.

⁵⁴ We tested whether the effects of employment losses in agriculture differ from those in manufacturing by breaking the deindustrialization variable into two component variables: one variable defined as 100 minus manufacturing employment as a percent of the working-age population, and another defined as 100 minus agricultural employment as a percent of the working-age population. The results for both variables are similar to those for the deindustrialization variable, but when both variables are entered simultaneously, the manufacturing variable has a somewhat stronger effect (0.045 versus 0.035 for transfers, and 0.035 versus 0.022 for consumption). One reviewer suggested that a possible reason for this pattern can be found in social mobility studies, which show that a greater decline in agriculture occurs through intergenerational mobility than in manufacturing.

⁵⁵ Paul Pierson, *Dismantling the Welfare State: Reagan, Thatcher and the Politics of Retrenchment* (New York: Cambridge University Press, 1994); idem, “The New Politics of the Welfare State,” *World Politics* 48 (January 1996).

involving overall expansion are no longer feasible—a conjecture that deserves further exploration, considering that the process of deindustrialization is coming to a halt in many countries.

None of the political terms register any impact on transfers. As discussed previously, the level of transfer payments is not necessarily a contentious partisan issue, unlike the distributive composition of such payments. As Esping-Andersen notes, “There is no reason to expect that expenditure commitments, as such, should be related to left-party power.”⁵⁶ Right as well as left governments, exposed to the pressures of democratic politics, recognize the need to address the risks that people encounter in the labor market; these risks are largely captured by the deindustrialization variable. Where they obviously differ is in terms of whose interests in the electorate are accorded more or less attention, a distributive issue to which the aggregate level of transfers does not speak.

In this respect the logic of government consumption is very different because public provision of services directly reduces inequalities in peoples’ access to basic services such as education and health care and because public employment is used by left governments to support egalitarian wage policies.⁵⁷ Unsurprisingly, therefore, all of the political variables turn out to affect civilian government consumption in the predicted direction. Thus each percentage increase in the electoral participation rate raises the target level of spending by about 0.15 percent. Likewise, a typical left government spends about 2 percent more than a typical right government if we look at the long run.⁵⁸ The strength of labor in the industrial relations system also has an upward effect on spending, as expected.

These results, however, disguise a richer causal story that cannot be captured by simple additive models like those presented in Table 3. As argued by Garrett and others, the effects of forces that create labor-market risks are conditional on political and institutional factors, and our argument implies several causal pathways for the relationship between deindustrialization and spending. In order to pinpoint these mechanisms and to bring out the interaction effects that are implied by the theoretical argument, we have conducted a causal path analysis. The results from this analysis are summarized in Figure 2.

The effect of deindustrialization runs along two different paths. First, deindustrialization raises the generosity of transfer payments as

⁵⁶ Esping-Andersen (fn. 7), 115.

⁵⁷ *Ibid.*; Iversen and Wren (fn. 8).

⁵⁸ A typical left government is defined here as one that is 1 standard deviation to the left of the mean on the partisan government variable. A typical right government is defined similarly.

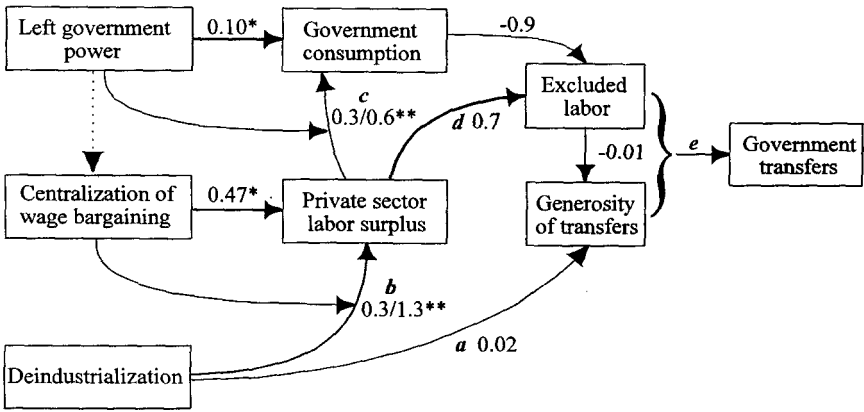


FIGURE 2
THE CAUSAL MECHANISMS LINKING DEINDUSTRIALIZATION TO SPENDING^a

^a All parameters are long-term, permanent effects; all are significant at a .05 level or better. Variables are defined in the text and in the appendix.

KEY:

- a: Deindustrialization creates electoral pressures to ensure against labor-market risks (higher “generosity of transfers”).
- b: Deindustrialization leads to redundancies when private service sector employment growth is constrained (which is greater when wage bargaining is centralized).
- c: Employment problems generate electoral pressures to expand government services (which are accommodated primarily under left governments).
- d: Redundant labor that is not being employed in either private or public services will increase the number of people reliant on transfers (“excluded labor”).
- e: Government transfers are equal to the product of “excluded labor” and “generosity of transfers.”
- *: Long-term effect when deindustrialization (alternatively: private sector labor surplus) is at its mean value; **: effect of deindustrialization (alternatively: private sector labor surplus) when the conditioning variable is 1 standard deviation below or above its mean.

governments respond to electoral pressures for insurance against labor-market risks (path *a*). Generosity is measured here as the ratio of transfers to GDP over the ratio of the nonworking to the total population. Thus, if transfers as a proportion of the total size of the economy rise faster than the share of the nonworking population, generosity will increase. As before, we use a pooled error correction model with changes in generosity on the left-hand side, and the lag of the level of generosity plus all the variables in the second column of Table 3 on the right-hand side. The coefficient next to the causal arrow measures the permanent long-term effect of deindustrialization. In substantive

terms, the estimated coefficient suggests that a 1 percent loss of employment in the traditional sectors will raise the level of generosity by a similar amount, adjusting for all indirect effects. In turn, higher generosity obviously implies higher government transfers, so deindustrialization is directly related to spending via generosity.

The second causal path goes through the employment effects of deindustrialization, which are conditioned by labor-market institutions and partisan politics. Insofar as redundant labor in the traditional sectors are not being picked up by new employment in private services, (path *b*) governments are likely to face electoral pressures to create employment by expanding public provision of services (path *c*). This effect, however, is conditioned by two political-institutional variables. First, we know from past studies that the capacity of the private service sector to generate employment is negatively related to wage compression.⁵⁹ The likely reason for this negative relationship is that productivity grows at a much slower rate in most services than in most manufacturing. Hence, in labor-intensive services, which include many personal and social services, a tightly coupled and compressed wage structure will result in rising relative prices and therefore in a slower rate of new job creation. Because centralized wage bargaining is closely related to wage compression,⁶⁰ this phenomenon is observed primarily in northern Europe where bargaining is highly centralized. And it shows up clearly in our results as an interaction effect between deindustrialization and centralization of bargaining.

More specifically, in liberal market economies with decentralized bargaining, such as Canada or the United States, most or all employment losses in the traditional sectors are picked up by growth in private service employment. Surplus labor in the private sector, measured as the difference between deindustrialization and changes in private service sector employment, is consequently small or absent. By contrast, when bargaining is centralized, as in Germany or Sweden, deindustrialization produces large numbers of workers who cannot find employment in private services. In terms of our regression analysis, which includes controls for labor-force participation rates and economic

⁵⁹ See Eileen Appelbaum and Ronald Schettkat, "Employment and Productivity in Industrialized Countries," *International Labor Review* 134, nos. 4–5 (1995); and Iversen and Wren (fn. 8).

⁶⁰ Robert Rowthorn, "Corporatism and Labour Market Performance," in Jukka Pekkarinen, Matti Pohjola, and Rowthorn, eds., *Social Corporatism* (Oxford: Clarendon Press, 1992); Michael Wallerstein, "Wage-Setting Institutions and Pay Inequality in Advanced Industrial Societies," *American Journal of Political Science* 43 (July 1999); David Rueda and Jonas Pontusson, "Wage Inequality and Varieties of Capitalism" (Working paper, Institute for European Studies, Cornell University, 1998).

growth, when centralization is one standard deviation below the mean, a 1 percent drop in manufacturing employment results in a 0.3 percent increase in the private sector employment surplus. When centralization is one standard deviation above the mean, this effect is about four times greater.⁶¹

There is a close relationship between left partisan control over government power and centralization of wage bargaining ($r = 0.8$). Although this relationship has emerged only through a complex historical process without a clear-cut causal order, it is among the liberal market economies—those dominated by flexible labor markets and liberal governments—where governments are faced with the fewest problems of private sector labor redundancies. Instead, these countries “pay” for deindustrialization in the form of higher wage inequality, partly cushioned by the increased generosity of transfer payments (path *a*). Other countries have dealt with the employment pressures from deindustrialization in ways that also depend on the partisan orientation of the government. Specifically, wherever the left holds strong positions in government, service employment is expanded by increasing the direct provision of government services, that is, through a rise in government consumption (path *c*). In substantive terms, when left partisanship is one standard deviation above the mean, a one standard deviation increase in the private sector labor surplus is associated with a commensurable increase in government consumption. When considering countries with centralized bargaining systems, right governments (of a mostly Christian democratic bent) shy away from expanding public service production. The increase in consumption in these cases is correspondingly less than half the increase in the labor surplus of the private sector.

Finally, when redundant labor is not absorbed into public service employment, the private sector labor surplus will register in the form of early retirees, disability pensioners, and unemployed workers (labeled *excluded labor* in Figure 2) who have to be cared for through a variety of cash benefits arrangements (path *d*). This leads to an increase in government transfers, the size of which depends on the generosity of these transfers (“transfers” is simply “generosity” times “excluded labor”). The increase is not directly proportional to the increase in the excluded labor force because the latter has a dilution effect on the generosity of transfers, presumably because governments will seek to limit the bud-

⁶¹ Both figures are slightly exaggerated because there are small negative *indirect* effects of deindustrialization (through growth and other variables) that reduce the net impact of deindustrialization. Yet these indirect effects do not affect the *gap* in the effect of deindustrialization between countries with centralized and decentralized bargaining structures, which is what is of interest here.

getary pressures by cutting other welfare programs. Still, the net effect is a significant increase in total government transfers.

In combination, the results from these regression analyses strongly support the deindustrialization argument. Thus, as deindustrialization increases, both government transfers and government consumption rise, but the latter effect is particularly strong when wage bargaining is centralized and when governments are dominated by left parties. Under right governments, most of the effect comes through increases in transfers. The reason is that right governments will not compensate for private sector labor redundancies through public service production, using instead transfer schemes, such as early retirement, to facilitate labor-market exit. Since centralized wage bargaining reduces the absorptive capacity of workers who are made redundant in the traditional sectors, the effect on transfers is particularly strong when bargaining is centralized.

THE SOURCES OF DEINDUSTRIALIZATION

Our results strongly suggest that deindustrialization, not trade or capital market openness, is the driving force behind the expansion of government spending on both transfers and services. Nevertheless, it could be objected that deindustrialization may itself be a consequence of trade and financial openness or that it is caused by, not causing, government spending. Even though either one of these possibilities is interesting in its own right, both would obviously significantly alter the picture we have presented of the relationship between deindustrialization and spending. In order to complete our argument, we therefore have to show that deindustrialization is largely driven by domestic factors other than spending itself.

Economists are divided on the question of whether trade causes employment losses in the traditional sectors. On one side of the debate, reflecting not only a particular economic theory but also a generally popular view (the “giant sucking sound”), is the idea that the sources of deindustrialization in the West during recent decades lay squarely in the competitive pressures emanating from Third World producers.⁶² From this perspective, changes in the North–South trade have been estimated to account on average for 50 percent of the reduction in manufacturing that occurred between 1970 and 1990.⁶³ In addition, it can be argued

⁶² See, for example, Wood (fn. 52); Steven S. Saeger, “Globalization and Economic Structure in the OECD” (Ph.D. diss., Harvard University, 1996); and idem, “Globalization and Deindustrialization: Myth and Reality in the OECD,” *Weltwirtschaftliches Archiv* 133, no. 4 (1997).

⁶³ Saeger (fn. 62, 1997), 604.

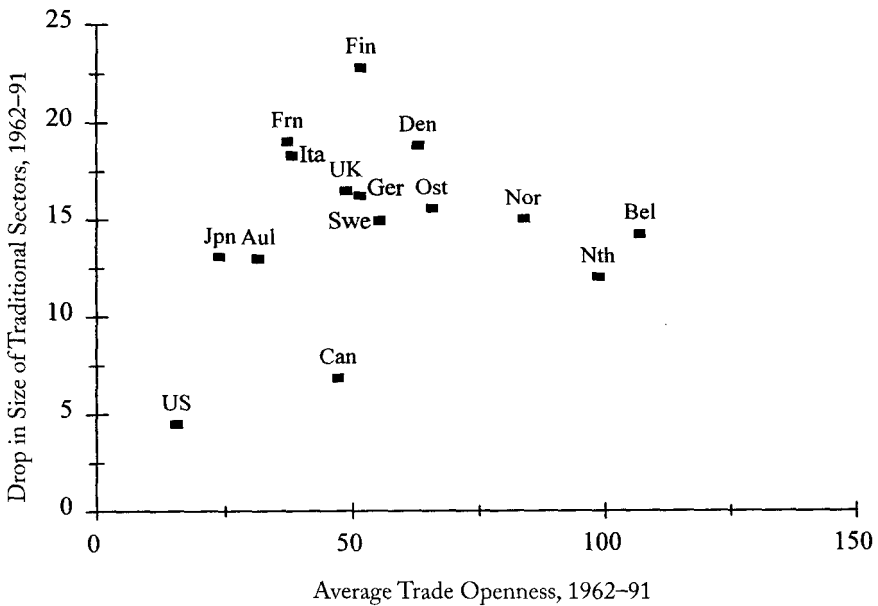


FIGURE 3
TRADE OPENNESS AND LOSSES IN TRADITIONAL SECTORS^a

^aTrade openness is exports plus imports as a percentage of GDP; drop in the share of traditional sectors is measured as the change in the percentage of the working-age population engaged in agriculture or industry between 1962 and 1991.

that the removal of restrictions on capital makes it increasingly easier for businesses to relocate production facilities to countries with lower wage costs and that this in turn diminishes the demand for labor within the industrial sectors of the advanced market economies.⁶⁴

The alternative school, while not denying that trade has played a role in deindustrialization, sees the principal causes as residing in domestic sources.⁶⁵ Among these are a change in preference patterns away from manufactured goods and toward services, high productivity growth in the face of inelastic demand, as well as the associated changes in in-

⁶⁴ Wolfgang Streeck, "German Capitalism: Does It Exist? Can It Survive?" in Colin Crouch and Streeck, eds., *Political Economy and Modern Capitalism: Mapping Convergence and Diversity* (London: Sage, 1997).

⁶⁵ Robert Rowthorn and Ramana Ramaswamy, "Deindustrialization: Causes and Implications" (International Monetary Fund Working Paper, no. 42, Washington, D.C., 1997); idem, "Growth, Trade, and Deindustrialization," *International Monetary Fund Staff Papers* 46 (March 1999); Paul Krugman, *Pop Internationalism* (Cambridge: MIT Press, 1996).

vestment in new productive capacity.⁶⁶ North-South trade accounts for at most one-sixth of the loss in manufacturing employment in these studies.⁶⁷

Furthermore, it may indeed be the case that the welfare state is itself responsible for the decline in employment in the traditional sectors. As Bacon and Eltis have argued, both the costs posed by taxation as well as the generosity of the modern welfare state, including the opportunity to work for at least equivalent if not higher wages in the public sector, have had a tremendous negative effect on industrial employment.⁶⁸ The notion of efficiency losses from distortionary taxation is in fact a quite common assumption in economic models of the welfare state.⁶⁹ It is of course also a view that is popular with political parties and governments of a neoliberal bent.

Figure 3 provides some descriptive evidence on the question of whether trade causes deindustrialization. It plots the loss of employment in the traditional sectors from 1962 through 1991 against the average trade openness for the same period. There is little hint of any relationship. Indeed the correlation between the two series is about 0.17.

Alternatively, if one were to adopt the hypothesis that deindustrialization has more to do with internal processes, processes of productivity gain and shifting tastes, then one would expect that a process of convergence has been under way. Thus, early industrializers, who had pretty much gone through this transformation by the beginning of this period, would have suffered the least loss of employment in the traditional sectors, while late industrializers would have experienced more rapid decline. As Figure 4 demonstrates, there seems to be a fair amount of support for this position. The correlation between employment intensity in the traditional sectors in the year 1962 and the loss of employment in these sectors over the three succeeding decades is about 0.85. Thus, the United States, which had the smallest traditional sectors (about 24 percent), experienced the smallest loss (less than 5 percent). Finland, lagging well behind the United States and having nearly

⁶⁶ Rowthorn and Ramaswamy (fn. 65, 1999), 19.

⁶⁷ We recognize that the debate over trade with LDC countries is broader than the question of whether it has led to widespread deindustrialization. It also involves issues such as the relative performance of particular manufacturing industries, relative prices, and above all, wage inequality. For a good introduction to the debate see the special issue of *Journal of Economic Perspectives* 9 (Special issue, 1995). For our purposes, however, the key issue is whether or not our main independent variable, deindustrialization, is in large measure the result of competition from low-wage countries.

⁶⁸ Robert Bacon and Walter Eltis, *Britain's Economic Problem: Too Few Producers* (London: Macmillan, 1976).

⁶⁹ See, for example, Meltzer and Richard (fn. 40); and Alberto Alesina and Roberto Perotti, "The Welfare State and Competitiveness," *American Economic Review* 87 (December 1997).

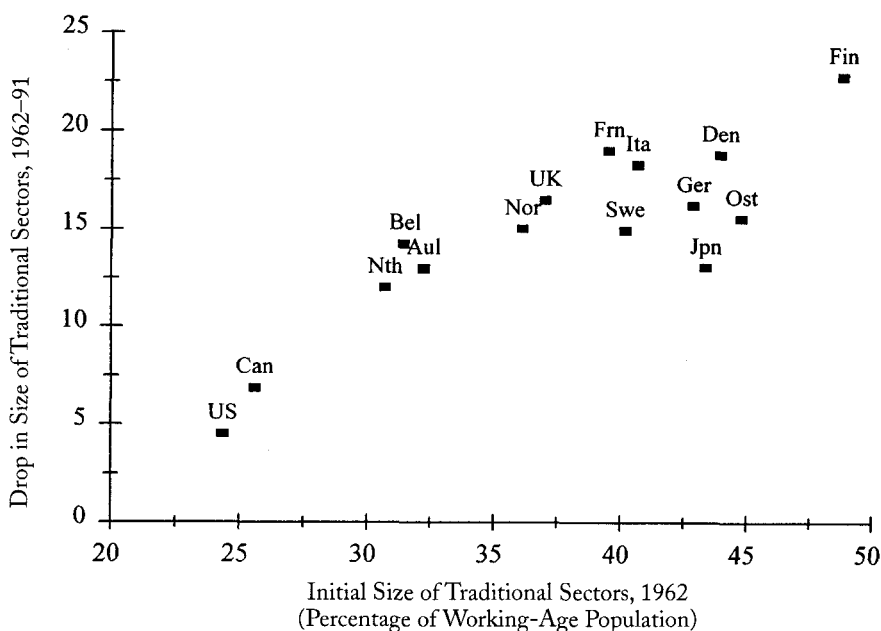


FIGURE 4
INITIAL SIZE AND LOSSES IN TRADITIONAL SECTORS

50 percent of its working-age population engaged in the traditional sectors, experienced the largest loss in the sample of fifteen countries, well over 20 percent.

But descriptive and indirect evidence of this nature can sometimes be misleading. We have therefore estimated a pooled cross-section-time-series model that uses the change in the log of the number of people employed in manufacturing and agriculture as a share of the working-age population as the dependent variable (see Table 4).⁷⁰ This setup is standard in the existing literature, except that we have included agricultural employment on the left-hand side to make the results speak directly to our deindustrialization variable.⁷¹ However, the results are very similar if we focus exclusively on manufacturing employment.

⁷⁰ As in the previous analysis, problems of heteroskedasticity led us to employ Beck and Katz's method for deriving panel corrected standard errors. Beck and Katz (fn. 50).

⁷¹ We could have used change in the log of the deindustrialization variable on the left-hand side in Table 4 without affecting the results (except for switching the signs of parameters, of course). We chose the current setup to stay as close as possible to the analysis by Rowthorn and Ramaswamy (fn. 65).

TABLE 4
REGRESSION RESULTS FOR INDUSTRIALIZATION^a

<i>Domestic Variables</i>		<i>International Variables</i>	
[Lagged level]	-0.113*** (-5.27)	Capital openness	0.001 (0.30)
Productivity growth	-0.353*** (9.09)	Δ Capital openness	0.001 (0.50)
Income	0.523** (2.18)	OECD trade balance	0.002*** (3.47)
Income squared	-0.30** (2.24)	Δ OECD trade balance	0.004*** (4.43)
Growth in income	0.585*** (8.50)	OPEC trade balance	-0.004* (-1.96)
Capital formation	0.032*** (5.53)	Δ OPEC trade balance	-0.003 (-1.35)
Government transfers	-0.001 (-0.99)	LDC trade balance	-0.003** (-2.12)
Government consumption	0.001 (0.30)	Δ LDC trade balance	-0.002 (-1.19)
Increase in explained var.	35%		5%
Adjusted R-squared			0.52
Number of observations			378

^a T-scores in parentheses. The increase in explained variance is the change in R-squared when the set of endogenous and exogenous variables are added to a model where these variables are excluded. The results for country dummies are not shown.

* Significance level: <0.10

** Significance level: <0.05

*** Significance level: <0.01

The analysis includes fourteen OECD countries for which we have complete data in the period from 1964 through 1990.⁷²

For presentational ease Table 4 divides the independent variables in a group of “domestic” variables and a group of “international” variables. Following the existing economic literature we include among the domestic-structural variables: (1) a measure of productivity growth, (2) the log of income per capita and the square of this variable to capture

⁷² The countries include: Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Sweden, the United Kingdom, and the United States. Missing data problems precluded adding Switzerland. The time frame is the maximum possible given the availability of data.

changing consumption preferences, (3) the growth in per capita income as a measure of demand effects, (4) gross capital formation as a share of GDP, and (5) the two spending variables. For the exogenous variables we have included (1) the balance of trade with OECD, with OPEC, and with less-developed countries (LDCs); and (2) the capital market openness variable used above.

The productivity measure is meant to capture the tendency of firms to shed workers as productivity increases. Note that there is some theoretical ambiguity with respect to the impact of this variable. While faster productivity growth makes goods relatively cheaper and therefore boosts demand, less labor is required to produce the same amount of output. The net effect on employment depends on the price and income elasticity of demand as well as on real wage changes. Research, however, has shown that the labor saving effect tends to dominate the demand effect in the period of interest.⁷³ For the income terms, the expectation is that the parameter on the first term will be positive and that on the second term will be negative, signifying that as income passes beyond a certain level, the relative demand for goods in both the agricultural and manufacturing sectors will begin to decline. The effects of capital formation and growth in income are expected to be positive since both will boost production and demand for labor.⁷⁴

The results are generally very supportive of our argument. Deindustrialization is almost exclusively driven by domestic factors other than the welfare state. Technological progress, demand conditions, and shifting consumption patterns cause employment in industry and agriculture to decline. Evidence does not show that government spending has crowded out employment in the traditional sectors. Given our previous findings, every indication is that the causal arrow goes in the opposite direction. Trade also does not appear to be an important source of deindustrialization. A negative trade balance with other industrialized countries (and the first difference in that trade balance) does hurt industrial employment. The effect is substantively small, however, and cannot have been a major cause of deindustrialization across the OECD area for the simple reason that intra-OECD trade remains relatively balanced over time.

The crucial question with respect to trade is whether growing trade with less-developed countries has priced out a substantial number of

⁷³ See Appelbaum and Schettkat (fn. 59); and idem, "The End of Full Employment? On Economic Development in Industrialized Countries," *Intereconomics* 29 (May–June 1994).

⁷⁴ Investment is measured as a percentage share of GDP. It is taken from the Robert Summers and Alan Heston, *Penn World Tables*, version 5.5, datafile (Cambridge: National Bureau of Economic Research, 1993).

workers in agriculture and industry in the advanced countries. We find no evidence to that effect. The coefficients on the lagged levels of the trade balances with OPEC countries and with Third World countries are both negative and statistically significant, while both of the coefficients on the first differences are statistically insignificant. Note, that these results, which suggest that positive trade balances with the OPEC and Third World countries lower employment while negative balances promote employment, are not the consequence of multicollinearity. Also, their effects do not change in substantive terms when we use alternative specifications of the model. We have run a large number of regressions using a variety of combinations of trade balances and import penetration measures, and the results are *all* contrary to the hypothesis that trade leads to deindustrialization. In fact, the results in Table 4 are the strongest we have been able to produce in *support* of the popular perception.⁷⁵ The same is true for the capital-market-openness variable which consistently fails to produce effects that are statistically distinguishable from zero.

Though surprising given popular views, our results essentially replicate those in an OECD study by Rowthorn and Ramaswamy,⁷⁶ even though our data and model specification are somewhat different. Like Rowthorn and Ramaswamy we find that deindustrialization is driven primarily by deep economic processes that are unrelated to either openness or spending. Productivity growth in the traditional sectors leads to a loss in employment, whereas rising demand through growing investment or incomes has a positive effect. Consistent with Engel's law, the results also indicate that demand for agricultural and manufacturing first rises with income and then falls at higher levels thereby eventually diminishing the level of traditional employment. We conclude from this analysis that our argument and results for spending are robust to the charges that deindustrialization is a mediating variable and that its association with spending is a result of reversed causality.

CONCLUSION

The domestic effects of the international economy has been increasingly emphasized in political-economic theory as well as popular accounts. There is no denying that international trade and financial liberalization have heightened interdependence among states and

⁷⁵ The results of alternative specifications are available from the authors upon request.

⁷⁶ Rowthorn and Ramaswamy (fn. 65, 1999).

played an increasingly important role in shaping public policy. The causal primacy of these factors in shaping the dimensions of the welfare state, however, appears to be greatly exaggerated.

A concomitant aspect of this exaggeration of global factors is the neglect of domestic forces of change—forces that are driven by technological advance and shifting demand patterns. These forces have caused massive shifts in the employment structure, the most notable being the shift from manufacturing to services. Because people often have skills that travel poorly between these sectors and because employer-provided social insurance is limited by a firm or by industry, deindustrialization poses significant risks that can be addressed only through government expansion of social security and public employment. In future work, the transferability of skills will be an important focus because the political effects of changes in the occupational structure depends on it. For example, a country like Germany with a training system that emphasizes specific skills will be politically more sensitive to occupational shifts than a country like the U.S. where the educational system emphasizes general skills.

Why has the role of deindustrialization been ignored in explanations of welfare state expansion? We suspect that one reason is a misconception that the shift in the employment structures is relatively uniform across countries, a common mistake in political science.⁷⁷ As we document in the introduction, there is in fact tremendous variation in the extent of deindustrialization, and our empirical results demonstrate that this factor can account for a very significant proportion of the variance in welfare state spending. Another reason for the omission is undoubtedly an outgrowth of the idea, deeply ingrained in most of our theories of comparative political economy, that the rise of the welfare state is linked to the strength of the industrial working class. What our analysis suggests is that any major transformation in the employment structure, whether from agriculture to industry or from industry to services, produces insecurities in the labor market that propel demands for state intervention.

Governments of all political stripes have responded to these demands by expanding transfer payments and social service provision. Nevertheless, partisanship continues to be important in the redistributive aspects of the welfare state. This shows up clearly in the results for public consumption, which has expanded much more rapidly in coun-

⁷⁷ Jonas Pontusson, "Explaining the Decline of European Social Democracy: The Role of Structural Economic Change," *World Politics* 47 (July 1995).

tries where the left is strong. We would conjecture that the same is true for transfer payments if the composition, rather than the level, of spending is examined.

In fact, there are reasons to expect that deindustrialization will be associated with increasingly distinct partisan effects. First, due to gaps in productivity growth across sectors, egalitarian policies tend to inhibit the expansion of private service sector employment. These policies present the government with an increasingly clear choice between either excluding more and more people from the labor market or employing more of them in public service sector jobs. Second, with the process of sectoral transformation coming to an end in many countries, the political support for further welfare state expansion is likely to wane, whereas distributive conflicts over existing welfare state programs are likely to intensify. We believe that these political aspects of deindustrialization are promising areas for future research.

APPENDIX: GLOSSARY OF VARIABLES AND DATA SOURCES

$$\text{automatic consumption} = \frac{\text{gov consumption}}{\text{GDP}}(t-1) \cdot \left(\frac{\Delta \text{gov deflator}(t)}{\text{gov deflator}(t-1)} \right) / \left(\frac{\Delta \text{GDP deflator}(t)}{\text{GDP deflator}(t-1)} \right),$$

where gov deflator is the price deflator for government services, and GDP deflator is the price deflator for the whole GDP.

$$\text{automatic transfers} = \text{replacement rate}(t-1) \cdot \Delta \frac{\text{unemployed} + \text{population} > 65}{\text{population}}(t),$$

where the replacement rate is the percentage share of transfers in GDP relative to the percentage share of the dependent population in the total population at time $t - 1$.⁷⁸

capital formation. Gross capital formation as a percent of GDP.⁷⁹

capital market openness. The index measures the extent to which capital markets are liberalized.⁸⁰

⁷⁸ OECD, *Labour Force Statistics* (Paris: OECD, various years); and transfer data.

⁷⁹ Summers and Heston (fn. 74).

⁸⁰ Denis P. Quinn, and Carla Inclan, "The Origin of Financial Openness: A Study of Current and Capital Account Internationalization," *American Journal of Political Science* 41, no. 3 (1997).

deindustrialization. 100 minus the sum of manufacturing and agricultural employment as a percentage of the working-age population.⁸¹

electoral participation. Based on voter turnout rates as recorded on an annual basis in Mackie and Rose,⁸² the *European Journal of Political Research*, and in the International Institute for Democracy and Electoral Assistance.⁸³

excluded labor. 100 minus all employed people as a percent of the total population (change in this variable when used as a dependent variable).

generosity of transfers. The percentage share of transfers in GDP relative to the percentage share of the nonworking population in the total population (change in this variable when used as dependent variable).⁸⁴

government consumption. Total government consumption of goods and services net of military spending as a percentage of GDP.⁸⁵

government transfers. All government payments to the civilian household sector, including social security transfers, government grants, public employee pensions, and transfers to nonprofit institutions serving the household sector.⁸⁶

income. Gross domestic product per capita in purchasing power equivalents in 1985 U.S. dollars.⁸⁷

left government center of gravity. This is an index of the partisan left-right “center of gravity” developed by Cusack.⁸⁸ It is based on (1) Castles and Mair’s codings of government parties placement on a left-right scale,⁸⁹ weighted by (2) their decimal share of cabinet portfolios. The index varies from 0 (extreme right) to 4 (extreme left), although most observations are much closer to the mean.

private sector labor surplus. Deindustrialization minus the private service sector employment as a percent of the working-age population (change in this variable when used as dependent variable).

⁸¹ OECD (fn. 78).

⁸² Thomas T. Mackie and Richard Rose, *The International Almanac of Electoral History*, 3d ed. (London: Macmillan, 1991).

⁸³ International Institute for Democracy and Electoral Assistance, *Voter Turnout from 1945 to 1997. A Global Report on Political Participation* (Stockholm: IDEA Information Services, 1997).

⁸⁴ OECD (fn. 78); and transfer data.

⁸⁵ Thomas Cusack, “The Changing Contours of Government” (Wissenschaftszentrum Berlin für Sozialforschung, WZB Discussion Paper, no. 304, 1991); OECD (fn. 78); Stockholm International Peace Research Institute, *The SIPRI Year Book* (Stockholm: SIPRI, various years).

⁸⁶ Cusack (fn. 85); and OECD, *National Accounts, Part II: Detailed Tables* (Paris: OECD, various years)

⁸⁷ Summers and Heston (fn. 74).

⁸⁸ Cusack (fn. 24, 1997).

⁸⁹ Francis Castles and Peter Mair, “Left-Right Political Scales: Some ‘Expert’ Judgments,” *European Journal of Political Research* 12, no. 1 (1984).

productivity growth. Annual rate of change in real value added per worker in industry and agriculture.⁹⁰

strength of labor. Measured as the product of union density and centralization.⁹¹

trade balances. Merchandise trade balance expressed as a percent of GDP for three country groupings (OECD, OPEC, LDCs).⁹²

trade openness. Total exports and imports of goods and services as percentage of GDP.⁹³

unexpected growth. Real GDP per capita growth at time *t* minus average real per capita growth in the preceding three years. The variable is defined in accordance with Roubini and Sachs.⁹⁴

⁹⁰ OECD, *National Accounts CD-Rom* (Paris: OECD, 1995).

⁹¹ Density data: Jelle Visser, *European Trade Union in Figures* (Deventer, Netherlands: Kluwer Law and Taxation Publishers, 1989); and idem, "Unionization Trends Revisited" (Manuscript, University of Amsterdam, 1996). Centralization data: Torben Iversen, "Wage Bargaining, Central Bank Independence and the Real Effects of Money," *International Organization* 52 (Summer 1998).

⁹² IMF, *Direction of Trade Statistics Yearbook* (Washington, D.C.: IMF, various years).

⁹³ OECD (fn. 86).

⁹⁴ Roubini and Sachs (fn. 23); and OECD (fn. 86).